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Tuomas Niemela

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EXAMINER

MEW, KEVIN D

ART UNIT

PAPER NUMBER

2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 09/784,954	Applicant(s) NIEMELA ET AL.	
	Examiner Kevin Mew	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-13 and 24-29 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Response to Amendment

1. Applicant's Remarks/Arguments filed on 2/2/2007 regarding claims 1-3, 5-13 have been fully considered. Claims 14-23 have been canceled and claim 29 has been newly added by applicant. Claims 1-13, 24-29 are currently pending.
2. Acknowledgement is made of the terminal disclaimer filed on 2/2/2007 with respect to the non-statutory type double patenting rejection set forth in the previous Office action. Therefore, the double patenting rejection is now withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1, 25, 27, 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Balazinski et al. (USP 6,711,143) in view of Geagan, III et al. (USP 6,735,634 B1).

Regarding claims 1, 25, 27, Balazinski discloses a base station system (**BSS**) and a SGSN (SGSN, col. 2, lines 16-26) to perform a method of communicating data between a Base station system (BSS) and a Serving GPRS Support Node (SGSN) (**a system for interfacing an SGSN with a BSS utilizing a Gb-over-IP interface**, see lines 52-54, col. 2), and an apparatus (network

service entity NSE, col. 4, lines 33-37) to perform the method of communicating comprising the steps of:

means for providing protocol data and associated functions (**protocol stacks in the BSS and SGSN utilized the IP-based Gb interface**), including encapsulating a data packet with a User datagram protocol (UDP) and a Internet Protocol (IP) (**protocol stack comprising UDP layer and IP layer**, see lines 1-6, col. 5 and Fig. 3); and

transmitting the data packet provided with the protocol data (**data packets are transmitted between the BSS and SGSN over a connectionless IP network and the data packets carry information between functional entities in the SGSN and functional entities in the BSS**, see lines 22-25, col. 2).

wherein the apparatus communicate data between a base station system and a serving GPRS support node (NSE communicate data between a base station system and a serving GPRS support node, col. 4, lines 33-37).

Balazinski does not explicitly show the UDP comprises a UDP port associated with a Network service virtual connection (NS-VC), and the IP provides an IP address associated with a Network Service Entity (NSE).

However, Balazinski discloses a prior art drawing (Fig. 2) that indicates that a network service entity NSE (element 31, Fig. 2) is an interface between BSSGP sublayer and NS-NSC sublayer, and is identified by a plurality of BVCI's and a NSEI (col. 4, lines 24-27). Balazinski further discloses in Balazinski's invention that the BVCI's and NSEI's (col. 5, lines 35-37) can be modified by using UDP ports and IP addresses, respectively. In other words, the NSE can now

be identified by/associated with UDP ports and IP addresses. Thus, an IP address will be associated with an NSE.

In addition, since the modified *NS'-NSC* sublayer 40 will also be associated with NS-virtual circuits (col. 5, lines 49-67, col. 6, lines 1-6), the modified NSE will therefore still be associated with NS-virtual circuits. As already mentioned above, the modified NSE is associated with UDP ports, and hence the NS-virtual circuits will also be associated with UDP ports via the NSE.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the prior art NSE of Balazinski with the teaching of Balazinski's invention in modifying the NSE so that the NSE will be associated with IP addresses and UDP ports such that the UDP header of Balazinski will comprise a UDP port associated with a Network service virtual connection (NS-VC), and the IP provides an IP address associated with a Network Service Entity (NSE).

The motivation to do so is to provide a potential approach to implement the IP-based Gb' interface such that the transport over the BSSGP layer is connectionless and without re-transmissions.

Balazinski does not explicitly show encapsulating a data packet with a User datagram protocol (UDP) and a Internet Protocol (IP).

However, Geagan discloses that a data packet is encapsulated with UDP and UDP is further encapsulated as data portion of an IP packet (col. 2, line 41-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Balazinski with the teaching of Geagan in showing a data packet is encapsulated with UDP and UDP is further encapsulated as data portion of an IP packet such that the method of communicating data in Balazinski will also show encapsulating a data packet with a User datagram protocol (UDP) and a Internet Protocol (IP)), such as the one taught by Geagan.

The motivation to do so is to comply with the Internet standard such that it will make use of UDP to provide prompt delivery of data, and IP to provide the network address to which the data packet is destined.

4. **Claims 2, 5-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Balazinski in view Geagan, III et al. (USP 6,735,634 B1), and in further view of the admitted prior art, Forslow (WO 99/16266).

Regarding claim 2, the combined method of Balazinski and Geagan discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above, except fails to explicitly show the method as recited in claim 1, wherein the UDP port is identified as either for real-time or non-real time services.

However, Forslow discloses UDP protocol is paired up with RTP (Real-Time) protocol for providing real-time services (see Fig. 7). Furthermore, UDP is a connectionless protocol with no guarantee delivery of services, which makes it suitable for providing non real-time services.

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the protocol stack of Balazinski with that of Forslow such that the single UDP port of Balazinski will pair up with RTP protocol of Forslow so that it will support both real-time and non real-time services such as the RTP/UDP protocol taught by Forslow. The motivation to do so is to support multimedia services such as real-time video and audio services and non real-time applications such as file transfer because a circuit-switched bearer will be allocated if the a real-time service and a packet-switched bearer will be allocated for a non-real time service.

Regarding claim 5, the combined method of Balazinski and Geagan discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above, except fails to explicitly show the method as recited in claim 1, wherein the data packet comprises a Sub-network Dependent Convergence Protocol (SND CP).

However, Forslow discloses a method of communications between the mobile station and the SGSN in which the SGSN comprises a SND CP layer on top of the LLC layer in the protocol stack as shown in Fig. 3.

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine the protocol stack of Balazinski with the protocol stack of Forslow such that the protocol stack of Balazinski will comprise a SND CP layer lying on top of the LLC layer such as the SND CP layer taught by Forslow. The motivation to do so is to use SND CP to map network level protocol characteristics onto the underlying LLC and provides

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functionalities like multiplexing of network layer messages onto a single virtual logical connection, ciphering, segmentation, and compression.

Regarding claim 6, the combined method of Balazinski, Geagan and Forslow discloses all the aspects of the claimed invention set forth in the rejection of claim 5 above. Balazinski further discloses the method as recited in claim 5, wherein the data packet further comprise a Logical Link Control (LLC) (**LLC**, see lines 1-14, col. 5 and element 18, Fig. 3).

Regarding claim 7, the combined method of Balazinski, Geagan and Forslow discloses all the aspects of the claimed invention set forth in the rejection of claim 5 above. Balazinski also discloses the method as recited in claim 6, wherein the protocol data and associated functions further comprise:

- a base station system GPRS protocol (BSSGP) (**BSSGP**, see lines 1-14, col. 5 and element 17, Fig. 3);

- a network service control (**Network Service Control**, see lines 1-14, col. 5 and element 40, Fig. 3);

- a data link layer (**a link (L2) layer**, see lines 1-14, col. 5 and element 36, Fig. 3); and

- a physical link layer (**a physical (L1) layer**, see lines 1-14, col. 5 and element 35, Fig. 3).

Regarding claim 8, Balazinski discloses the method as recited in claim 7 further comprising the step of receiving the data packet provided with the protocol data (see lines 22-25, 55-61, col. 2).

Regarding claim 9, Balazinski discloses the method of communicating data as recited in claim 8 further comprising the step of removing the protocol data and associated functions and the LLC and the SNDCP.

Regarding claim 10, the combined method of Balazinski and Geagan discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above. Balazinski further discloses the method as recited in claim 1, wherein the protocol data and associated functions further comprise:

- a logical Link Control (LLC) (**LLC**, see lines 1-14, col. 5 and element 18, Fig. 3);
 - a base station system GPRS Protocol (BSSGP) (**BSSGP**, see lines 1-14, col. 5 and element 17, Fig. 3);
 - a network service control (**Network Service Control**, see lines 1-14, col. 5 and element 40, Fig. 3);
 - a data link layer (**a link (L2) layer**, see lines 1-14, col. 5 and element 36, Fig. 3); and
 - a physical link layer (**a physical (L1) layer**, see lines 1-14, col. 5 and element 35, Fig. 3).
- Balazinski does not explicitly show the method of communicating data as recited in claim 1, wherein the protocol data and associated functions further comprise:
- a sub-network dependent convergence protocol (SNDCP)

However, Forslow discloses a method of communications between the mobile station and the SGSN in which the SGSN comprises a SNDCP layer on top of the LLC layer in the protocol stack as shown in Fig. 3.

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine the protocol stack of Balazinski with the protocol stack of Forslow such that the protocol stack of Balazinski will comprise a SNDCP layer lying on top of the LLC layer such as the SNDCP layer taught by Forslow. The motivation to do so is to use SNDCP to map network level protocol characteristics onto the underlying LLC and provides functionalities like multiplexing of network layer messages onto a single virtual logical connection, ciphering, segmentation, and compression.

Regarding claim 11, Balazinski, Geagan and Forslow disclose all the aspects of the claimed invention set forth in the rejection of claim 10 above. Balazinski further discloses the method as recited in claim 10, wherein the SNDCP provides header compression and stripping for the lower layers such as IP (see lines 15-18, page 21).

Regarding claim 12, Balazinski, Geagan and Forslow disclose all the aspects of the claimed invention set forth in the rejection of claim 10 above. Balazinski further discloses the method as recited in claim 10 further comprising the step of receiving the data packet provided with the protocol data (see lines 22-25, 55-61, col. 2).

Regarding claim 13, Balazinski, Geagan and Forslow disclose all the aspects of the claimed invention set forth in the rejection of claim 10 above. Balazinski further discloses the method as recited in claim 12 further comprising the step of:

removing the physical link layer, the data link layer, the IP, the UDP, the network service control and the BSSGP (it is inherent that the de-encapsulation process using the protocol stack of Balazinski upon receiving the data packet would involve removing the header information of each underlying layer in the protocol stack as the data packet propagates up the protocol stack. it is also noted that the protocol stack of SGSN comprises layers in the ascending order of a L1 physical layer, a L2 link layer, an IP layer, an UDP layer, an network service control and a BSSGP).

5. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Balazinski in view Geagan, III et al. (USP 6,735,634 B1), and in further view of Lager et al. (USP 6,636,502).

Regarding claim 3, the combined method of Balazinski and Geagan discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above, except fails to explicitly show the method of communicating as recited in claim 1, wherein the data packet is associated with a temporary logical link identifier (TLLI) and a network service access point identifier (NSAPI).

However, Lager discloses that mobile station sends an activate Packet Data Packet (PDP) context request message, which comprises TLLI and NSAPI, to the SGSN, and the SGSN returns an Activate PDP Context Accept message, which comprises TLLI and NSAPI, to the mobile station (see lines 66-67, col. 6 and lines 32-35, col. 7).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the protocol stack of Balazinski with that of Lager such that data packet of the protocol stack of Balazinski would be associated with TLLI and NSAPI such as the

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TLLI and NSAPI in the PDP context taught by Lager. The motivation to do so is to for the mobile station to use the TLLI to identify itself to the SGSN and to select a dynamic PDP address by selecting a NSAPI.

6. **Claims 24, 26, 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Balazinski in view of Geagan, III et al. (USP 6,735,634 B1), and in further view of Alles et al. (USP 6,952,728).

Regarding claims 24, 26, 28, Balazinski and Geagan disclose all the aspects of the claimed invention set forth in the rejection of claims 1, 25, 27 above, except fail to explicitly show the UDP comprises source and destination UDP ports associated with the NS-VC and the IP provides a source and destination IP address associated with the NSE.

However, Alles discloses a data flow processing rule contains a classifier that specifies all the data flows with the source/destination IP addresses and UDP source/destination ports (see col. 11 , lines 17-25).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine the protocol stack of Balazinski with the teaching of Alles such that the UDP comprises source and destination UDP ports and IP provides a source and destination IP address. The motivation to do so is to uniquely identify a particular data flow so that a processing rule corresponding to a particular service policy will be generated.

Response to Arguments

7. Applicant's arguments filed on 2/2/2007 have been fully considered but they are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

8. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 4, the method of communicating as recited in claim 3 further comprising the step of:

providing a Link Select Parameter (LSP), the BVCI, NSEI and LSP associated with the TLLI and NSAPI, the LSP identifying a Network Service Virtual Link (NS-VL) associated with the NS-VC.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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